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NEW SPECIES OF THE FIG WASP GENUS *DIAZIELLA* (HYMENOPTERA, CHALCIDOIDEA, SYCOECINAE)

by

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ABSTRACT

Eight new species of *Diaziella* are described from Borneo: *alleni*, *laticeps*, *latipennis*, *longiceps*, *pallidiceps*, *retakensis*, *tumidigena*, and *wiebesi*. A key to the known species of the genus is added.

INTRODUCTION

The Sycoecinae are a well defined but enigmatic group of fig wasps. Although generally placed in the Torymidae, Bouček (in Bouček et. al., 1981) has suggested that they may have closer affinities with the Agaonidae. *Diaziella* Grandi is the only genus of the subfamily described from outside Africa, although representatives of a further, undescribed, genus have been collected in Australia (Wiebes, pers. comm.). Grandi (1928) based *Diaziella* on two new species from Sumatra (*D. bicolor* and *D. macroptera*). Wiebes (1974) subsequently added a further two species (*D. philippinensis* and *D. falcata*), both from the Philippines. With the exception of *D. falcata*, the species are known only from the female sex.

Material collected at light by B. Allen on the island of Borneo has been found to contain females of a further eight speecies. This paper describes these new species of *Diaziella* and provides a key to the known representatives of the genus.

Certain features are of particular value for distinguishing between the species, these are:

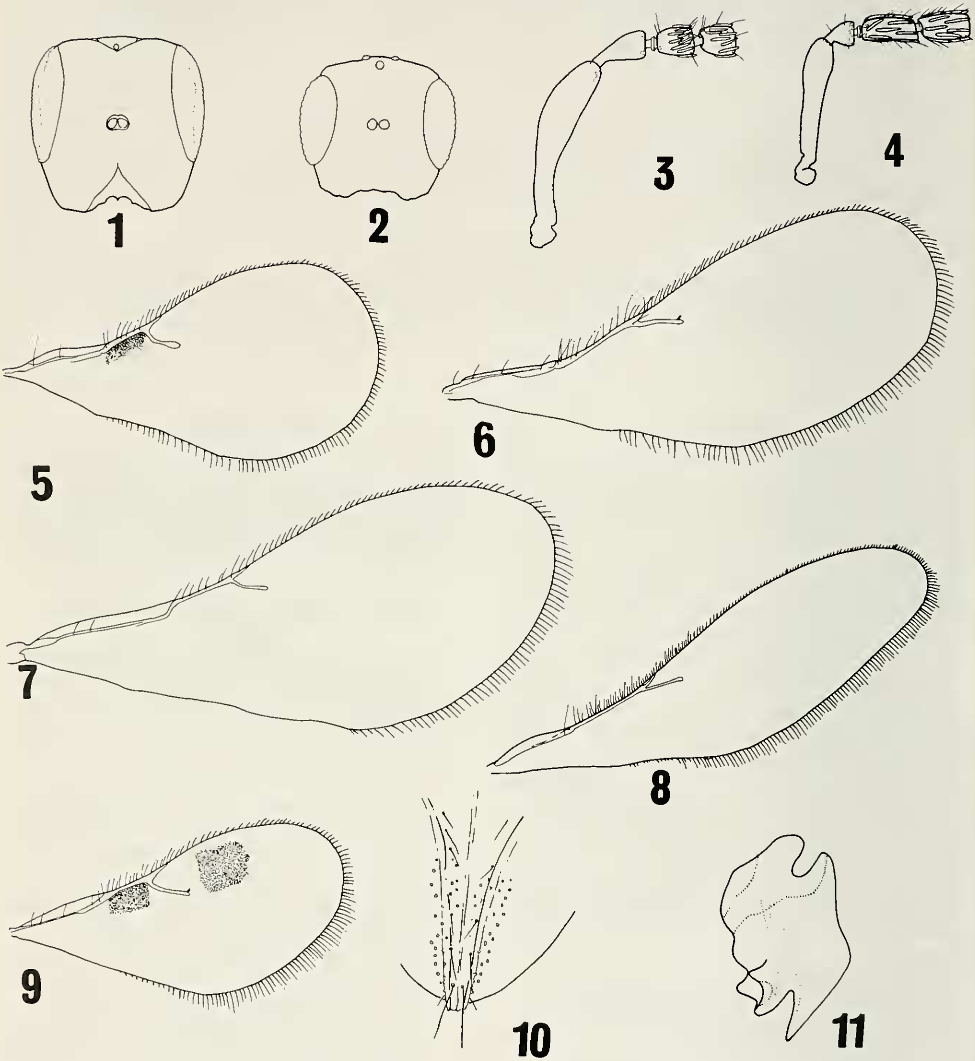
1. The epistomal margin of the clypeus, which is variable in shape and form.
2. The fore wings, which vary considerably in shape.
3. The mandibles. These have one or more cusps on the subapical tooth.
4. The hypopygium, which protrudes beyond the gaster to a varying extent.

METHODS

Specimens were stored in 70% ethanol. For detailed examination, examples of each species were slide mounted using a modified version of Prinsloo's (1980) technique for the preparation of permanent slide mounts.

Key to the known species of *Diaziella* (females)

1. Head yellow in colour; epistomal margin with three slight protuberances, one in the centre and one on either side of the central protuberance (the protuberances being broadly separated) (fig. 12) ....*pallidiceps* spec. nov.
— Head brown or black in colour, epistomal margin if having incisions or protuberances then not as above (for example figs. 1, 2, 19) 2
2. Epistomal margin with the central region forming an inverted w, the top of the w leveling off slightly and then rising to the cheek margin (fig. 1). First funicle segment of the antenna with irregular sensilla; remaining funicle segments with two slightly irregular transverse rows of sensilla. Submarginal to marginal ratio 1.8 : 1 or greater (fig. 7) .... *philippinensis*
— Epistomal margin not as described above (for example figs. 2, 43, 45). Funicle segments of antenna with one row of transverse sensilla, or at most with the first and second



Figs. 1, 7. *Diaziella philippinensis* Wiebes, female. 1, head; 7, fore wing. Figs. 2, 8. *Diaziella macroptera* Grandi, female (redrawn from Wiebes, 1974). 2, head; 8, fore wing. Figs. 3, 5. *Diaziella latipennis* spec. nov., female. 3, first five antennal segments; 5, fore wing. Fig. 6. *Diaziella alleni* spec. nov., fore wing. Figs. 9, 11. *Diaziella bicolor* Grandi, female (redrawn from Grandi, 1928). 9, fore wing; 11, mandible. Fig. 10. *Diaziella falcata* wiebes, female, hypopygium (redrawn from Wiebes, 1974).

funicle segments having two or three rows. Submarginal to marginal ratio less than 1.8 : 1 (figs. 5, 6, 9) 3

3. Antenna: Pedicel longer than the first funicle segment (fig. 3); first funicle segment with one irregular transverse row of large sensilla (fig. 3) 4

— Antenna: Pedicel shorter than first funicle segment (fig. 4); first funicle segment with more than one row of sensilla, which may form definite or integrated rows, but clearly not one row (fig. 4) 10

4. Basal portion of stigmal vein almost perpendicular to the wing margin (fig. 5). Wing club shaped, its length less than two and a half times the width (fig. 5) 5

— Basal portion of stigmal vein at an acute angle to the wing margin (fig. 6). Wing more elongate, its length more than two and a half times the width (fig. 6) 8

5. Fore wing with few microtrichia, almost glabrous. Hypopygium just projecting beyond the end of the abdomen (fig. 10) . . . *falcata*

— Fore wing with many microtrichia (fig. 17). Hypopygium clearly protruding beyond the end of the abdomen (fig. 66) 6

6. Two dark patches on the fore wing, one below the stigmal vein and adjacent to the marginal vein the other above the stigmal vein (fig. 9). Mandible with subapical tooth tricuspid (fig. 11) .... *bicolor*

— One dark patch on the fore wing, below the stigmal vein and adjacent to the marginal vein (fig. 5). Mandible with subapical tooth monocuspid or bicuspid (figs. 44, 46) 7

7. Head with the vertex raised towards the ocelli (fig. 45); epistomal margin with small cone-like central protuberance (fig. 45). Mandible bidentate tricuspidate and three times as long as wide (fig. 46). Antennal insertion clearly above ventral margin of the eye (fig. 45) .... *latipennis* spec. nov.

— Head with vertex truncate (fig. 43), epistomal margin more indented, with a central (but not cone like) protuberance. The sides of the protuberance smooth and leading up to a fairly sharp central point (fig. 43). Mandible bidentate bicuspidate, with a slight protuberance on the inner margin of the subapical tooth; four times as long as wide (fig. 44). Antennal insertion just above ventral margin of the eye (fig. 43) ....*laticeps* spec. nov.

8. Fore wing almost four times as long as wide (fig. 8). Epistomal margin indented and with two slight projections on either side of a small central incision (fig. 2) *macroptera*

— Fore wing less than three and a half times as long as wide (fig. 67). Epistomal margin either slightly protruding with a central incision (fig. 53) or indented but without a central incision (fig. 61) 9

9. Epistomal margin slightly protruding and with a central u-shaped incision (fig. 53) head more rounded in shape). Mandible bidentate tricuspidate; length approximately two and a half times the width (fig. 54) .... *alleni* spec. nov.

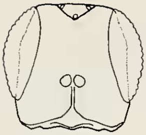
— Epistomal margin indented and with a very slight central protuberance (fig. 61) (head more square in shape). Mandible bidentate bicuspidate (the subapical tooth may have a small protuberance on the inner margin); length almost four times the width (fig. 62) .... *wiebesi* spec. nov.

10. Antennal insertion clearly closer to the epistomal margin than to the vertex (fig. 35). Head clearly longer than broad (1.13 : 1) (fig. 35). Epistomal margin with a central incision (fig. 35). Mandible bidentate tricuspidate, length approximately four times the width (fig. 36) .... *longiceps* spec. nov.

— Antennal insertion slightly or distinctly closer to the vertex than to the epistomal margin (figs. 19, 27). Head as long as broad or slightly longer than broad (max 1.04 : 1) (Figs. 19, 27). Epistomal margin with a central truncate protuberance (figs. 19, 27). Mandible bidentate bicuspidate, length more than six times the width (figs. 20, 28) 11

11. Mandible extremely long and narrow, the length more than nine times the width (fig. 28). Antennal insertion clearly closer to the vertex than to the epistomal margin (fig. 27). Epistomal margin with a broad truncate protuberance (width approximately one third the width of the head) (fig. 27); cheeks diverging towards the ventral margin (fig. 27) .... *tumidigena* spec. nov.

— Mandible length six to seven times longer than wide (fig. 20). Antennal insertion slightly closer to the vertex than to the epistomal margin (fig. 19). Epistomal margin with a smaller truncate protuberance (width approximately one seventh the width of the head) (fig. 19); cheeks parallel or converging towards the ventral margin (fig. 19) .... *retakensis* spec. nov.



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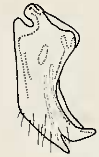

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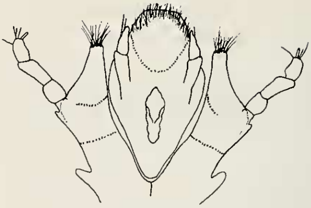

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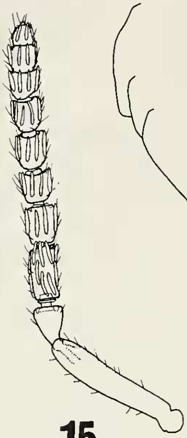

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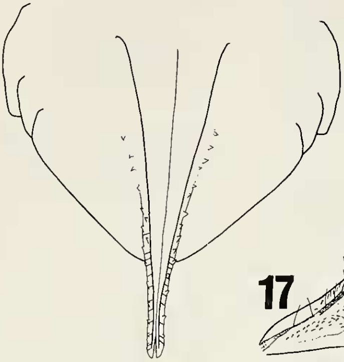

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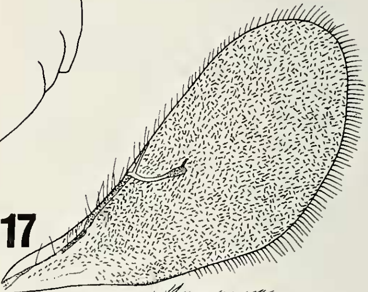

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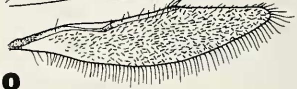

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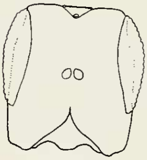

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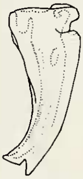

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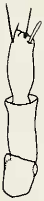

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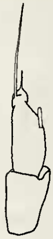

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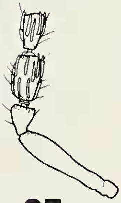

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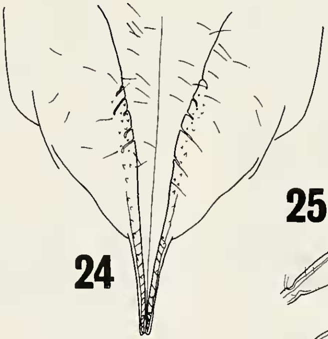

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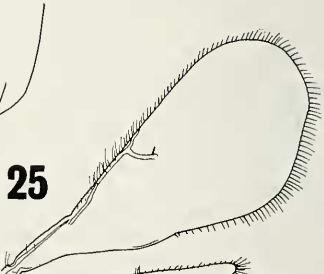

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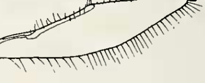

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Diaziella pallidiceps Gardiner spec. nov. (figs. 12—18)

Female. — Head (fig. 12) yellow in colour; almost quadrate, slightly wider than long (1.15 : 1); length of the compound eye approximately 2.5 times the length of the cheek (2.6 : 1); eyes protruding laterally; epistomal margin with three slight protuberances one in the centre and one on either side of the central protuberance. Antenna (fig. 15) eleven segmented: antennal insertion closer to the epistomal margin than to the vertex; scape almost four times as long as wide (3.75 : 1) and three times the length of the pedicel (3 : 1); pedicel shorter than the first funicle segment; funicle, first segment longer than the others (29 : 24 : 23 : 23 : 24), first funicle segment with two transverse rows of long sensilla; remaining segments including the three segmented club, with one row of sensilla each. Mandible (fig. 13) bidentate, subapical tooth longer than the apical tooth; mandible about four times longer than wide (3.9:1). Maxillary palp (fig. 14) three segmented (6 : 8 : 9); labial palp (fig. 14) two segmented (1:1).

Thorax. Fore wing (fig. 17) 1.33 mm long; length approximately 2.5 times the width (2.55 : 1); marginal vein twice the length of the stigmal (2.04 : 1); stigmal vein arising at almost 90° to the wing margin; submarginal 1.5 times the length of the marginal (1.58 : 1); membrane with dense microtrichia. Hind wing (fig. 18) 0.83 mm long; length about 4.5 times the width (4.6 : 1). Fore leg: tibia with one dorsal-apical tooth, one ventro-apical tooth and one spur; tibia to tarsal ratio 0.83 : 1; tarsal segments in ratio 23 : 12 : 8 : 24. Mid leg: tibia with one ventro-apical spur. Hind leg: tibia with two spurs (one much smaller than the other); tibia with a row of dorsal cones (usually three), tarsal segments in ratio 36 : 35 : 30 : 12 : 26.

Gaster. Hypopygium (fig. 16) length 0.51 mm, with many spines and extending well beyond end of abdomen. Pygostyle with four long setae.

Total length 2.21 mm.

Type material. — Holotype ♀ (slide mounted), Brunei, Mt. Retak, iv.1981, leg. B. Allen, at light. Paratypes: 6 ♀, same data as holotype (coll. dates 23—28.iv.1981). Holotype to be deposited in BM (NH) London, some paratypes in RMNH Leiden.

Diaziella retakensis Gardiner spec. nov. (figs. 19—26)

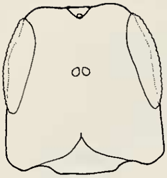
Female. — Head (fig. 19) dark brown to black in colour; almost quadrate, slightly longer than wide (1.05 : 1) or as long as wide; length of the compound eye almost twice that of the cheek (1.73 : 1); eyes slightly protruding laterally; epistomal margin with a truncate protuberance the width of which is an approximately one seventh the width of the head (epistomal margin below the ventral margin of the cheek). Antenna (fig. 23) eleven segmented; antennal insertion slightly closer to the vertex than to the epistomal margin (distance ratio 4 : 5); scape four times as long as wide (3.9 : 1) and about three times the length of the pedicel (2.81 : 1); pedicel shorter than the first funicle segment; funicle, first segment longer than the remaining four (30 : 22 : 23 : 22 : 23), first funicle segment with two rows of long sensilla; remaining segments including the three segmented club with one row of sensilla. Mandible (fig. 20) bidentate, bicuspidate, subapical tooth more robust than the apical but both of approximately the same length; mandible more than 6.5 times as long as wide (.6.77 : 1). Maxillary palp (fig. 21) three segmented (5 : 9 : 9); labial palp (fig. 22) two segmented (1 : 1).

Thorax. Fore wing (fig. 25) 1.33 mm long; length approximately 2.5 times the width (2.48 : 1); marginal vein twice the length of the stigmal (2 : 1); stigmal vein arising at almost 90° to the wing margin; submarginal one and a half times the length of the marginal (1.5 : 1); membrane with dense microtrichia. Hind wing (fig. 26) 0.82 mm long; length 4.5 times the width (4.56 : 1). Fore leg: tibia with two dorso-apical teeth, one ventro-apical tooth and one ventro-apical spur; tibia to tarsal ratio 1 : 1; tarsal segments in ratio 14 : 7 : 4 : 14. Hind leg: tibia with two ventro-apical spurs (one much smaller than the other); tibia with a row of dorsal cones (usually six) tarsal segments in ratio 32 : 37 : 27 : 20 : 27.

Gaster. Hypopygium (fig. 24) 0.51 mm long, with many spines and clearly extending beyond end of abdomen. Pygostyle with four long setae.

Total length 1.98 mm.

Figs. 12—18. *Diaziella pallidiceps* spec. nov., female. 12, head; 13, mandible, ventral aspect; 14, labiomaxillary complex; 15, antenna; 16, hypopygium; 17, fore wing; 18, hind wing. Figs. 19—26. *Diaziella retakensis* spec. nov., female. 19, head; 20, mandible, ventral aspect; 21, maxillary palp; 22, labial palp; 23, first five antennal segments; 24, hypopygium; 25, fore wing; 26, hind wing.



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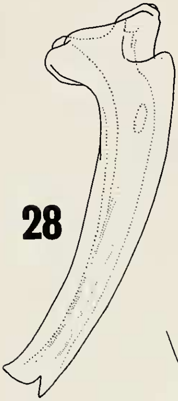

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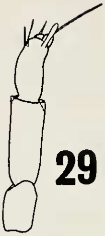

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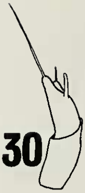

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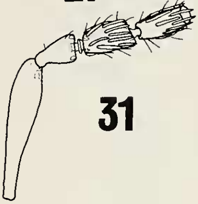

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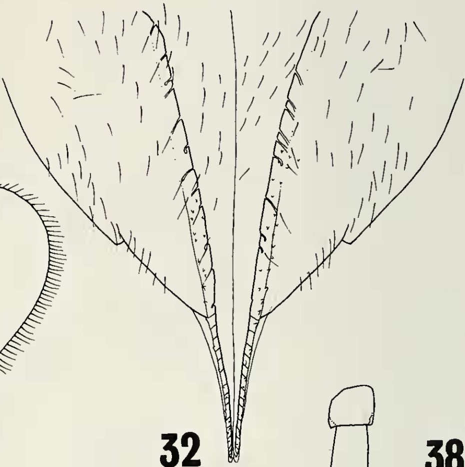

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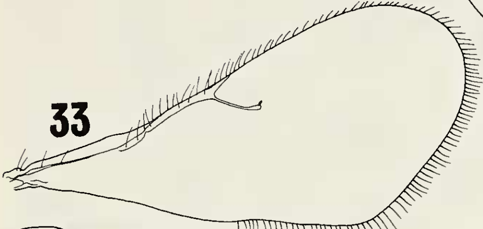

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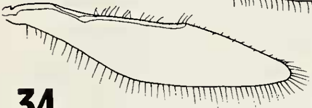

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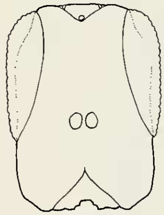

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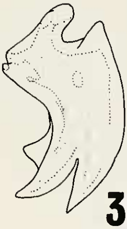

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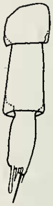

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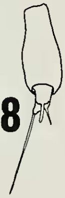

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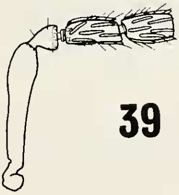

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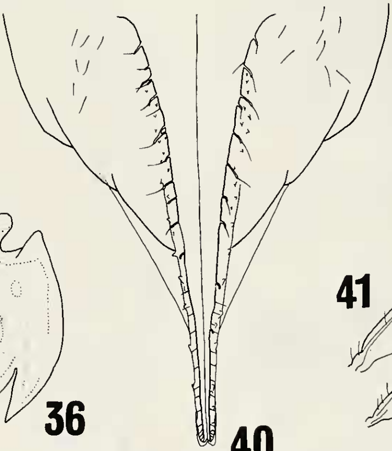

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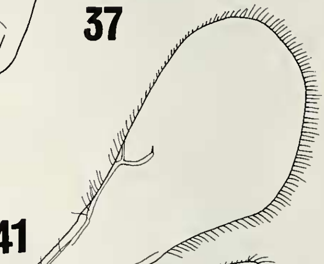

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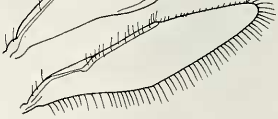

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Type material. — Holotype ♀ (slide mounted), Brunei, Mt. Retak, iv.1981, leg. B. Allen, at light. Paratypes: 9 ♀, same data as holotype (coll. dates 23—28.iv.1981). Holotype to be deposited in BM (NH) London, some paratypes in RMNH Leiden.

Diaziella tumidigena Gardiner spec. nov.
(figs. 27—34)

Female. — Head (fig. 27) dark brown to black in colour; bell shaped, slightly longer than wide (1.04 : 1); length of the eye slightly more than 1.5 times the length of the cheek (1.63 : 1); eyes not protruding beyond lateral margin of the cheek; cheek diverging towards the epistomal margin; epistomal margin with an almost truncate protuberance the width of which is approximately one third the width of the head (the epistomal margin protuberance may protrude beyond the ventral margin of the cheek). Antenna (fig. 31) eleven segmented; antennal insertion clearly closer to the vertex than to the epistomal margin (distance ratio 0.58 : 1); scape over four times as long as wide (4.37 : 1) and about three times as long as the pedicel (3.07 : 1); pedicel shorter than the first funicle segment; funicle, first segment longer than the remaining four and with two rows of long sensilla, second segment longer than the remaining three and with two irregular rows of long sensilla (37 : 31 : 28 : 28 : 28); remaining segments including the three segmented club with one row of sensilla. Mandible (fig. 28) bidentate, bicuspidate, subapical tooth more robust than the apical but both of approximately the same length; extremely long and narrow almost eleven times as long as wide (10.87 : 1). Maxillary palp (fig. 29) three segmented (9 : 12 : 11); labial palp (fig. 30) two segmented (9 : 7).

Thorax. Fore wing (fig. 33) 1.9 mm long; length almost 2.5 times the width (2.44 : 1); marginal vein twice the length of the stigmal (2.19 : 1); submarginal 1.5 times the length of the marginal (1.49 : 1); membrane with dense microtrichia. Hind wing (fig. 34) 1.17 mm long; length slightly more than four times the width (4.33 : 1). Fore leg: tibia with two dorso-apical teeth, one ventro apical tooth and one spur; tibia to tarsal ratio 0.96 : 1; tarsal segments in ratio 34 : 23 : 13 : 37. Hind leg: tibia with two ventro-apical spurs (one much smaller than the other); tibia with a row of dorsal cones (usually six) tarsal segments in ratio 50 : 56 : 36 : 25 : 36.

Gaster. Hypopygium (fig. 32) 0.62 mm long, with many spines, its projecting portion extremely long. Pygostyle with four long setae.

Total length 2.64 mm.

Type material. — Holotype ♀ (slide mounted), Sarawak, Mt. Pargon, 1850 m, 29.iv.1981, leg. B. Allen, at light. Paratypes: 2 ♀, same data as holotype. Additional material: 1 ♀, Brunei, Mt. Retak, iv.1981, leg. B. Allen, at light. Holotype to be deposited in BM (NH) London, a paratype in RMNH Leiden.

Diaziella longiceps Gardiner spec. nov.
(figs. 35—42)

Female. — Head (fig. 35) dark brown in colour; distinctly longer than wide (1.15 : 1); length of eye between 1.5—2 times the length of the cheek (1.74 : 1); eyes protruding laterally; epistomal margin having a central incision with stepped sides. Antenna (fig. 39) eleven segmented; antennal insertion closer to the epistomal margin than to the vertex; antennal insertion well above the ventral margin of the eye; scape 3.5 times as long as wide (3.5 : 1) and almost three times the length of the pedicel (2.8 : 1); pedicel shorter than the first funicle segment; funicle, first segment longer than the remaining four and with three irregular rows of long sensilla, second segment longer than any of the remaining three and with two irregular rows of long sensilla (40 : 34 : 31 : 30 : 31); remaining segments including the three segmented club with one row of sensilla each. Mandible (fig. 36) bidentate, tricuspidate, all cusps large with upper cusp of subapical tooth slightly larger than apical tooth; almost 3.5 times longer than wide (3.3 : 1). Maxillary palp (fig. 37) three segmented (5 : 7 : 7); labial palp (fig. 38) two segmented (9 : 7).

Thorax. Fore wing (fig. 41) 1.71 mm long; length between 2—2.5 times as long as wide (2.31 : 1); marginal vein almost twice the length of the stigmal (1.88 : 1); stigmal vein arising at almost 90° to the wing margin; submarginal 1.5 times the length of the marginal (1.5 : 1); mem-

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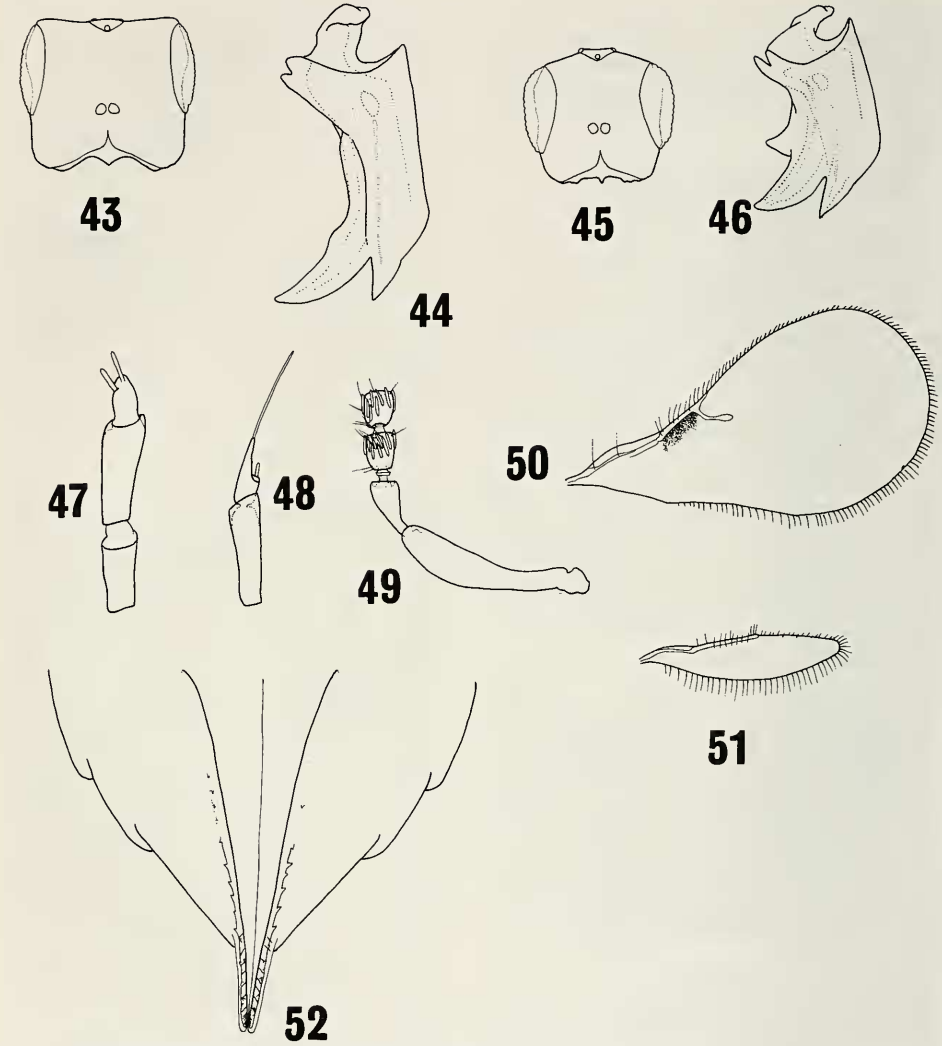
Figs. 27—34. *Diaziella tumidigena* spec. nov., female. 27, head; 28, mandible, ventral aspect; 29, maxillary palp; 30, labial palp; 31, first five antennal segments; 32, hypopygium; 33, fore wing; 34, hind wing. Figs. 35—42. *Diaziella longiceps* spec. nov., female. 35, head; 36, mandible, ventral aspect; 37, maxillary palp; 38, labial palp; 39, first five antennal segments; 40, hypopygium; 41, fore wing; 42, hind wing.



Figs. 43, 44. *Diaziella laticeps* spec. nov., female. 43, head; 44, mandible, ventral aspect. Figs. 45—52. *Diaziella latipennis* spec. nov., female. 45, head; 46, mandible, ventral aspect; 47, maxillary palp; 48, labial palp; 49, first five antennal segments; 50, fore wing; 51, hind wing; 52, hypopygium.

brane with dense microtrichia.. Hind wing (fig. 42) 1.07 mm long; length almost 4.5 times the width (4.4 : 1). Fore leg: tibia with two dorso-apical teeth, one ventro-apical tooth and one spur; tibia to tarsal ratio 0.89 : 1; tarsal segments in ratio 33 : 14 : 11 : 31. Hind leg: tibia with two ventro-apical spurs (one much smaller than the other); tibia with a row of dorsal cones (usually six) tarsal segments in ratio 44 : 47 : 36 : 22 : 30.

Gaster. Hypopygium (fig. 40) 0.66 mm long, with many spines and extending well beyond the end of the abdomen. Pygostyle with four long setae.

Total length 2.44 mm.

Type material. — Holotype ♀ (slide mounted), Brunei, Mt. Retak, iv.1981, leg. B. Allen, at light. Paratypes: 5 ♀, same data as holotype (coll. dates 23—28.iv. 1981). Additional material: 3 ♀, Sarawak, Mt. Pargon, 1850 m, 29.iv.1981, leg. B. Allen, at light. Holotype to be deposited in BM (NH) London, some paratypes in RMNH Leiden.

Diaziella laticeps Gardiner spec. nov.
(figs. 43, 44)

Female. — Head (fig. 43) brown in colour; almost quadrate, slightly wider than long (1.18 : 1); length of the eye slightly more than 1.5 times the length of the cheek (1.7 : 1); eyes protruding slightly beyond lateral margin of the head; epistomal margin indented with a central protuberance and with the clypeus sloping back towards the posterior of the head. Antenna (as in *D. latipennis*, fig. 49) eleven segmented; antennal insertion closer to the epistomal margin than to the vertex and slightly above the ventral margin of the eye; scape four times as long as wide (4.17 : 1) and about 2.5 times the length of the pedicel (2.63 : 1); pedicel longer than the first funicle segment; funicle, first segment longer than the remaining four and with one irregular row of long sensilla (30 : 25 : 22 : 22 : 24); remaining segments including the three segmented club with one row of sensilla. Mandible (fig. 44) bidentate, bicuspidate, subapical tooth longer than the apical and with a slight protuberance on its inner margin; about 4.5 times as long as wide (4.6 : 1). Maxillary palp three segmented (4 : 5 : 2); labial palp two segmented (1 : 1) (Maxillary and labial palps similar in appearance to *D. latipennis* spec. nov., figs. 47 and 48 respectively).

Thorax. Fore wing (as in *D. latipennis* spec. nov. fig. 50) 2.14 mm long; length twice the width (2 : 1); marginal vein 1.5 times the length of the stigmal (1.5 : 1); stigmal vein arising at almost 90° to the wing margin; submarginal 1.5 times the length of the marginal (1.5 : 1); membrane with dense microtrichia and a dark marking below the stigmal vein (adjacent to the marginal vein). Hind wing (as in *D. latipennis* spec. nov., fig. 51) 1.38 mm long; length almost five times the width (4.78 : 1). Fore leg: tibia with two dorso-apical teeth, one ventro-apical tooth and one spur; tibia to tarsal ratio 1:1; tarsal segments in ratio 33 : 21 : 13 : 40. Hind leg: tibia with two ventro-apical spurs (one much smaller than the other); tibia with a row of dorsal cones (usually six) tarsal segments in ratio 68 : 62 : 43 : 25 : 41.

Gaster. Hypopygium (as in *D. latipennis* spec. nov., fig. 52) 0.63 mm long with many spines and extending well beyond the end of the abdomen. Pygostyle with four long setae.

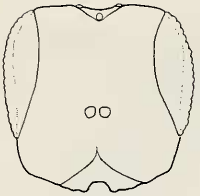
Total length 2.93 mm. Apart from the characteristic head and mandibles *D. laticeps* spec. nov. is very similar to *D. latipennis* spec. nov.

Type material. — Holotype ♀ (slide mounted), Sarawak, Mt. Pargon, 1850 m, 29.iv.1981, leg. B. Allen, at light. Paratypes: 12 ♀, same data as holotype. Additional material: 2 ♀, Brunei, Mt. Retak, 23—28.iv.1981, leg. B. Allen, at light and 2 ♀, Brunei, Temburong River, 300 m, 26.iv.1981, leg. B. Allen, at light. Holotype to be deposited in BM(NH) London, some paratypes in RMNH Leiden.

Diaziella latipennis Gardiner spec. nov.
(figs. 45—52)

Female. — Head (fig. 45) dark brown in colour; vertex raised towards the ocelli; wider than long (1.27 : 1); longitudinal diameter of the eye not quite 2.5 times the length of the cheek (2.37 : 1); eyes protruding laterally; epistomal margin slightly indented and with a small central cone like protuberance. Antenna (fig. 49) eleven segmented; antennal insertion closer to the epistomal margin than to the vertex and well above the ventral margin of the eye; scape almost 4.5 times as long as wide (4.41 : 1) and almost three times longer than the length of the pedicel (2.89 : 1); pedicel longer than the first funicle segment; funicle, first segment longer than any of the remaining four and with one slightly irregular row of long sensilla (30 : 24 : 24 : 25 : 25); remaining segments including the three segmented club with one row of sensilla. Mandible (fig. 46) bidentate, tricuspidate (subapical tooth with two large cusps), three times as long as wide (3 : 1). Maxillary palp (fig. 47) three segmented (5 : 6 : 4); labial palp (fig. 48) two segmented (1 : 1).

Thorax. Fore wing (fig. 50) 2.3 mm long; length twice the width (2 : 1); marginal vein almost 1.5 times the length of the stigmal (1.43 : 1); stigmal vein arising at almost 90° to the wing margin submarginal vein 1.5 the length of the marginal (1.58 : 1); membrane with dense microtrichia and a dark marking below the stigmal vein (adjacent to the marginal vein). Hind wing (fig. 51) 1.3 mm long; length between 4.5 to five times longer than wide (4.64 : 1). Fore leg: tibia with two dorso-apical teeth, one ventro-apical tooth and one spur; tibia to tarsal ratio 1 : 1; tarsal segments in ratio 35 : 20 : 12 : 42. Hind leg: tibia with two ventro-apical spurs (one much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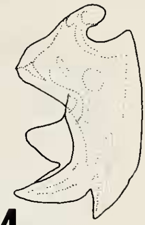
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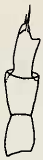
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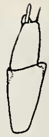
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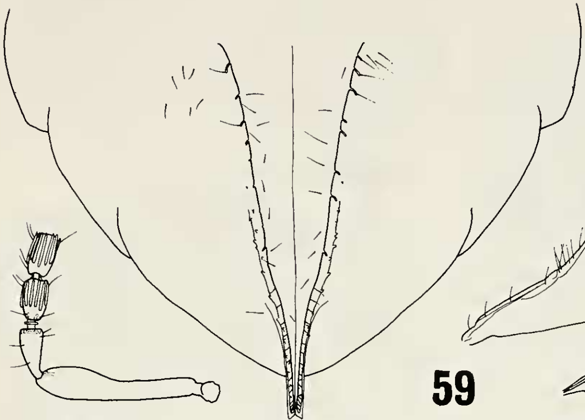
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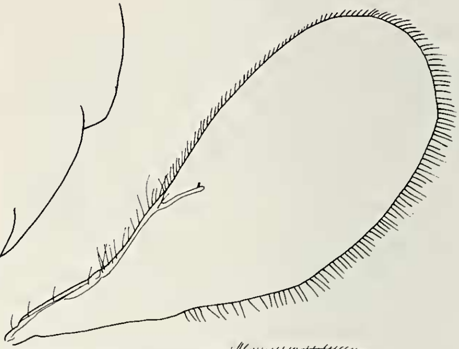
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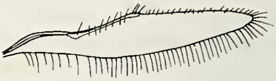
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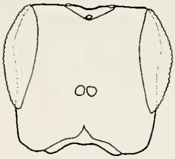
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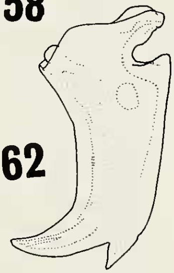
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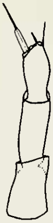
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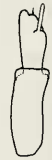
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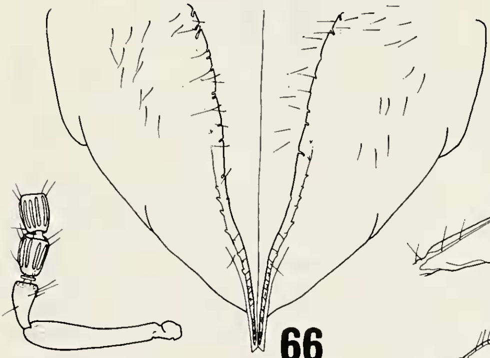
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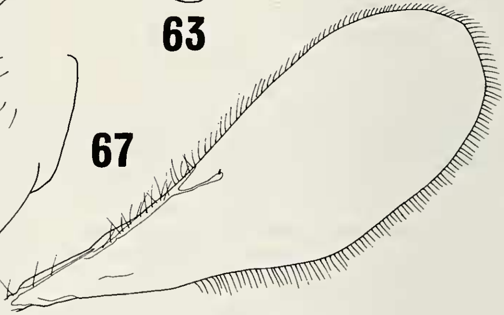
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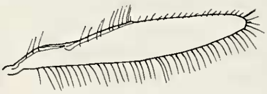
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smaller than the other); tibia with a row of dorsal cones (usually four) tarsal segments in ratio 6 : 5 : 4 : 2 : 3.

Gaster. Hypopygium (fig. 52) 0.59 mm long, with many spines and clearly projecting beyond the end of the abdomen. Pygostyle with four long setae.

Total length 2.73 mm.

Type material. — Holotype ♀ slide mounted), Brunei, Mt. Retak, iv.1981, leg. B. Allen, at light. Paratype: 1 ♀, same data as holotype (coll. dates 23—28.iv.1981). Additional material: 2 ♀, Sarawak, Mt. Pargon, 1850 m, 29.iv.1981, leg. B. Allen, at light. Holotype to be deposited in BM (NH) London.

Diaziella alleni Gardiner spec. nov.
(figs. 53—60)

Female. — Head (fig. 53) brown in colour; almost quadrate; slightly wider than long (1.08 : 1); length of the eye twice the length of the cheek (2.12 : 1); eyes protruding beyond the lateral margins of the head; epistomal margin initially protruding and then forming a large central u shaped incision. Antenna (fig. 57) eleven segmented; antennal insertion closer to the epistomal margin than to the vertex; scape 4.5 times as long as wide (4.65 : 1) and just over 2.5 times the length of the pedicel (2.72 : 1); pedicel longer than the first funicle segment; the funicle segments approximately the same size (10 : 9 : 9 : 9 : 9); all the funicle and club segments with one row of long sensilla. Mandible (fig. 54) very robust; bidentate tricuspidate, upper cusp of subapical tooth larger than the apical tooth and lower cusp of subapical tooth approximately the same length as the apical tooth, length 2.5 times the width (2.58 : 1). Maxillary palp (fig. 55) three segmented (5 : 5 : 6); labial palp (fig. 56) two segmented (7 : 6).

Thorax. Fore wing (fig. 59) 1.84 mm long; length 2.5 times the width (2.57 : 1); marginal vein slightly more than 1.5 times the length of the stigmal (1.68 : 1); stigmal vein arising at an acute angle to the wing margin; submarginal vein slightly longer than the marginal (1.22 : 1); membrane with dense microtrichia. Hind wing (fig. 60) 0.93 mm long; narrow almost 6.5 times longer than wide (6.43 : 1). Fore leg: tibia with two dorso-apical teeth, one ventro-apical tooth and one spur; tibia to tarsal ratio 0.95:1; tarsal segments in ratio 27 : 16 : 11 : 28. Hind leg: tibia with two ventro-apical spurs (one much smaller than the other); tibia with a row of dorsal cones (usually six) tarsal segments in ratio 55 : 47 : 32 : 22 : 33.

Gaster. Hypopygium (fig. 58) 0.49 mm long, with many spines and clearly extending beyond end of abdomen. Pygostyle with four long setae.

Total length 2.15 mm.

Type material. — Holotype ♀ (slide mounted), Brunei, Mt. Retak, iv.1981, leg. B. Allen, at light. Paratypes: 7 ♀, same data as holotype (coll. dates 23—28.iv.1981). Additional material: 2 ♀, Sarawak, Mt. Pargon, 1850 m, 29.iv.1981, leg. B. Allen, at light. Holotype to be deposited in BM (NH) London, some paratypes in RMNH Leiden.

Diaziella wiebesi Gardiner spec. nov.
(figs. 61—68)

Female. — Head (fig. 61) dark brown to black in colour; almost quadrate, wider than long (1.25 : 1); length of the eye slightly more than twice the length of the cheek (2.26 : 1); eyes protruding beyond the lateral margin of the head; epistomal margin indented and with a slight central prominence. Antenna (fig. 65) eleven segmented; antennal insertion closer to the epistomal margin than to the vertex; scape almost five times longer than wide (4.93 : 1) and 2.5 times the length of the pedicel (2.55 : 1); pedicel longer than the first funicle segment; first funicle segment slightly longer than the remaining four (19 : 16 : 16 : 16 : 17); all funicle segments and the three segmented club with one row of long sensilla. Mandible (fig. 62) bidentate, bicuspidate, subapical tooth clearly longer than the apical (a small protuberance may be present on the inner margin of the subapical tooth); length four times the width (4.09 : 1). Maxillary palp (fig. 63) three segmented (11 : 17 : 14); labial palp (fig. 64) two segmented (16 : 11).

Thorax. Fore wing (fig. 67) 1.98 mm long; length almost three times the width (2.87 : 1); marginal vein between 1.5—2 times the length

Figs. 53—60. *Diaziella alleni* spec. nov., female. 53, head; 54, mandible, ventral aspect; 55, maxillary palp; 56, labial palp; 57, first five antennal segments; 58, hypopygium; 59, fore wing; 60, hind wing. Figs. 61—68. *Diaziella wiebesi* spec. nov., female. 61, head; 62, mandible, ventral aspect; 63, maxillary palp; 64, labial palp; 65, first five antennal segments; 66, hypopygium; 67, fore wing; 68, hind wing.

of the stigmal (1.72 : 1); stigmal vein arising at an acute angle to the wing margin; submarginal slightly longer than the marginal (1.29 : 1); membrane with dense microtrichia. Hind wing (fig. 68) 0.93 mm long; narrow the length about seven times the width (6.89 : 1). Fore leg: tibia with two dorso-apical teeth, one ventro-apical toothh and one spur; tibia to tarsal ratio 1 : 1.07; tarsal segments in ratio 23 : 12 : 7 : 22. Hind leg: tibia with two ventro-apical spurs (one much smaller than the other); tibia with a row of dorsal cones (usually six); tarsal segments in ratio 48 : 44 : 30 : 19 : 27.

Gaster. Hypopygium (fig. 66) 0.45 mm long, with many spines and clearly extending beyond the end of the abdomen. Pygostyle with four long setae.

Total length 2.08 mm.

Type material. — Holotype ♀ (slide mounted), Brunei, Mt. Retak, iv.1981, leg. B. Allen, at light. Paratypes: 61 ♀, same data as holotype (coll. dates 23—28.iv.1981). Additional material: 2 ♀, Sarawak, Mt. Pargon, 1850 m, 29.iv.1981, leg. B. Allen, at light. Holotype to be deposited in BM (NH) London, some paratypes in RMNH Leiden.

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